

CS 3430: Py & PL
Assignment 9: Final Project Proposal

Vladimir Kulyukin
Department of Computer Science
Utah State University

1. Learning Objectives

1. Technical Writing
2. Software Project Planning

2. Project Proposal

The purpose of the final project is to give you a chance to do something a little more significant than a regular weekly assignment. The project's concept, design, and implementation are all up to you. Since it is impossible to cover all aspects of either Python or Perl in a one-semester course, the final project is a great opportunity for you to go beyond the scope of the class and study a topic that you find interesting. This is an individual project meaning all work is to be your own. This assignment will give you a chance to practice technical writing, a much underappreciated skill among software developers, which results in volumes of unreadable online documentation.

The goal of this proposal is for both you and I to have a clear understanding of what you will develop. This will also help identify potential problems now instead of one day before the project deadline. I also want to make sure that you neither do too much or too little. In the end, I want you to have a successful project and have some fun working on it.

The best project idea is one you find interesting. Scratch your itch. Here are some suggestions:

- A game. This is always the most popular option.
- Extend an existing application. Many Python and PL projects are open source. You can find an open-source project and extend/modify it in some interesting, specific ways.
- Implement something which interests you from another class. For example, maybe you have taken a data mining/AI/computer vision class and would like to use that knowledge to implement in a project. Several students in the previous versions of this class used Python's API to OpenCV for interesting computer vision projects.
- Implement something needed at your job. A two-for-one deal. Get class credit, get paid, and, with some luck, get promoted! Talk to your bosses or co-workers, share your ideas with them, get their feedback and go for it.

Your proposal should describe your project in as much detail as possible. This will force you to plan and design your system ahead of when you are actually coding it. Your proposal should be written in such a way that you could give it to another developer with an appropriate skill level and they could build your application using your proposal as a guide to the design.

Your proposal should contain, at a minimum, the following information:

1. **Basic Description** (2 paragraphs): A basic description of what the application will do. This should be a short description describing the basic features and a typical use case.

2. **Target User** (1 paragraph): Describe your target user who would normally be using this application.

3. **Target Operating System** (at most 1 paragraph): Are you writing this for a specific platform, or do you want to make your code portable across different operating systems. If you plan to use Py3, state that explicitly and justify your selection.

4. **3rd Party Libraries, API's, data sources** (2-3 sentences per resource): Describe any 3rd party tools or resources you want to use. If a tool is available online, give a working URL.

5. **Risks**: List the parts of the project with which you have concerns and that may cause you potential coding or scheduling problems. All projects have risks associated with them. The trick is to manage the risks and address them earlier rather than later.

6. **Skills**: Brief description of your skills relevant to the project.

For example, you want to develop a game. But you mention that a) you have never developed a game in any language and b) will be using PyGame, PILLOW, or OpenCV in your game. Those are two big risks, and, depending on your skill level, I may recommend that you decide on a different project or scale down your current project. On the other hand, if you say that you have had some experience with game development and, although you do not know OpenCV, you would like to learn it. That is a reasonable risk, and, as long as you do not get too fancy with your design, I would probably say - go for it. If you do not mention any risks, then you have not thought deeply enough about the project and I reserve the right to return your proposal to you for further modification.

3. What and Where to Submit

Submit your project proposal as PDF through Canvas.